

**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (currently amended) An integrated information communication system comprising:  
at least one set of a communication company management network, in which said communication company management network includes an access control apparatus,  
a relay apparatus, and

a server; ~~and~~ wherein said access control apparatus, said relay apparatus, and said server are connected to each other via an internal communication line having a packet transfer function, and wherein:

when two, or more sets of said communication company management networks are employed, these communication company management networks are connected via a boundary relay apparatus to each other by using said internal communication line; an external terminal of said integrated information communication system is connected via a user communication line to said access control apparatus, an internal address is applied to a logic terminal so as to identify said logic terminal of a termination of said user communication line, and also said access control apparatus contains a conversion table;

~~in such a case that~~ if a request identification field of said conversion table ~~implies is~~ a value indicating a virtual dedicated line, then identification information of a logic terminal ~~into which~~ has received an external packet ~~is inputted~~ is registered as a record of said conversion table in such a manner that ~~if the determination of~~ said identification information of the logic terminal ~~is determined, then~~ allows for an exclusive determination of an internal destination address ~~is exclusively determined~~ which is stored in a header of an internal packet produced by an access control apparatus installed on the transmission side;

~~in such a case that~~ if said request identification field ~~implies is~~ a private address communication, a set of information/address comprising an identification information of a logic terminal which has received ~~into which~~ an external packet ~~is inputted~~; an

external source address thereof; and an external destination address thereof is registered as a record of said conversion table in such a manner that if the determination of said information/address set ~~is determined, then~~ allows for an exclusive determination of said internal destination address ~~is exclusively determined~~ which is stored into the header of the internal packet produced by the access control apparatus installed on the transmission side;

with respect to identification information of the same logic terminal, a set of said external destination address and said internal destination address stored into said header portion is made different from each and every other ~~every~~ record; and

a delivery destination of said external packet can be changed by changing an external destination address contained in an external packet which is entered from the same logic terminal;

~~in such a case that~~ if said request identification field implies ~~is~~ a non-private address communication, a set of said identification information of the logic terminal and said source address is registered as a record of said conversion table; said registration implies a transmission permission with respect to a terminal having said external source address; said external packet is reached from said terminal via said user communication line to an access control apparatus; a detection is made of such a fact so that;

as a first case, said request identification is registered as a virtual dedicated line into a record of said conversion table containing the identification information of the logic terminal which has received ~~into which~~ said external packet is ~~inputted~~;

as a second case, said request identification is registered as a private address communication into the record of said conversion table;

as a third case, said request identification is registered as a non-private address communication;

wherein in both said first case and said second case, said external packet is converted into said internal packet by employing both logic terminal identification information and an internal destination address, which are acquired from said conversion table; and

in said third case, while said external packet is directly used as an internal packet, said internal packet acquired in said first case to said third case is transferred via said internal communication line and said relay apparatus provided in said integrated information communication system, and also is transferred via a logic terminal of an access control apparatus installed on the reception side to another user communication line so as to be thereby reached to another terminal and when a packet filter employed in said access control apparatus detects that the destination address contained in said external packet corresponds to such an address which is not opened outside network, said packet filter discards said detected external packet.

2. (currently amended) An integrated information communication system comprising:

at least one set of a communication company management network, in which said communication company management network includes an access control apparatus, a relay apparatus, and

a server; and said access control apparatus, wherein said relay apparatus, and said server are connected to each other via an internal communication line having a packet transfer function, and wherein:

when two, or more sets of said communication company management networks are employed, these communication company management networks are connected via a boundary relay apparatus to each other by using said internal communication line;

an external terminal of said integrated information communication system is connected via a user communication line to said access control apparatus, an internal address is applied to a logic terminal so as to identify said logic terminal of a termination of said user communication line, and also said access control apparatus contains a conversion table;

~~in such a case that~~ if said request identification ~~field implies~~ is a private address communication, a set of information/address comprising an identification information of a logic terminal which has received ~~into which~~ an external packet ~~is inputted;~~ an external source address thereof; and an external destination address thereof is registered as a record of said conversion table in such a manner that ~~if the determination of~~ said information/address set is determined, then allows for an

exclusive determination of said internal destination address ~~is exclusively determined~~ which is stored into the header of the internal packet produced by the access control apparatus installed on the transmission side;

with respect to identification information of the same logic terminal, a set of said external destination address and said internal destination address stored into said header portion is made different from each ~~other every record; and~~ and every other record;

a delivery destination of said external packet can be changed by changing an external destination address contained in an external packet which is entered from the same logic terminal;

~~in such a case that if~~ said request identification contained in said conversion table field implies is a non-private address communication, a set of said identification information of the logic terminal and said source address is registered as a record of said conversion table;

said registration implies a transmission permission with respect to a terminal having said external source address;

an external packet is reached from a terminal via a user communication line to an access control apparatus;

when it is so detected that a request identification is registered as a private address communication as said first case into a record of said conversion table containing the identification information of the logic terminal which has received ~~into which~~ said external packet ~~is inputted, and~~ when it is so detected that both the external source address and the external destination address contained in said external packet are registered as a record of said conversion table, said external packet is converted into said internal packet by employing both the logic terminal identification information and the internal destination address which are acquired from said conversion table;

when it is so found out that said request identification is registered as a non-private address communication as a second case, if the external source address contained in said external packet is registered into the record of said conversion table, then the transmission permission of the terminal having said external source address can be confirmed, so that said external packet is directly used as said internal packet;

said internal packet is transferred via said internal communication line and said relay apparatus provided in said integrated information communication system, and also is transferred via a logic terminal of an access control apparatus installed on the reception side to another user communication line so as to be thereby reached to another terminal and when a packet filter employed in said access control apparatus detects that the destination address contained in said external packet corresponds to such an address which is not opened outside network, said packet filter discards said detected external packet.

3. (currently amended) An integrated information communication system as claimed in claim 1 wherein: said external packet is transmitted/received between said communication company management networks by employing an address commonly used between said communication company management networks; and when a packet filter of a boundary relay apparatus detects that the destination address contained in said external packet is located in a range of an address which is not opened outside network, said packet filter discards said external packet; and either encryption or a digital signature can be applied which can be agreed by said two communication companies for said external packet to be transmitted/received.

4. (currently amended) An integrated information communication system, ~~wherein:~~ comprising:

an external packet reached to an access control apparatus via an external communication line is converted into an internal packet assigned with a simple header based on a conversion table in said access control apparatus, wherein

said external packet includes an external source address and an external destination address,

said internal packet comprises said simple header and said external packet, and

said simple header includes said internal destination address and information section;

said internal packet is sent from a network node via relay apparatus;

said internal destination address is referred at said relay apparatus, is transferred in said integrated information communication system and then reaches to another access control apparatus,

said external packet is restored from said internal packet and is transferred to an external communication line of said integrated information communication system;

~~and~~ only when a set of three addresses of an originating internal address assigned at a logic terminal of a communication line termination ~~inputting~~ inputs said external packet, an external destination address of said ~~inputted~~ entered external packet and said external source address is registered as the record in the conversion table of said input side access control apparatus, and said external packet is converted into said internal packet; and

wherein said set comprises two addresses of said originating internal address and a external destination address in the entered external packet.

5. (canceled).

6. (currently amended) An integrated information communication system ~~as claimed in claim 4~~, comprising:

an external packet reached to an access control apparatus via an external communication line is converted into an internal packet assigned with a simple header based on a conversion table in said access control apparatus, wherein

said external packet includes an external source address and an external destination address,

said internal packet comprises said simple header and said external packet, and

said simple header includes said internal destination address and information section;

said internal packet is sent from a network node via relay apparatus;

said internal destination address is referred at said relay apparatus, is transferred in said integrated information communication system and then reaches to another access control apparatus,

said external packet is restored from said internal packet and is transferred to an external communication line of said integrated information communication system;

only when a set of three addresses of an originating internal address assigned at a logic terminal of a communication line termination inputs said external packet, an external destination address of said entered external packet and said external source address is registered as the record in the conversion table of said input side access control apparatus, and said external packet is converted into said internal packet; and

wherein record of said conversion table is ~~two or more~~, at least two, group of said destination address is different at respective records for an internal address assigned to logic terminal of a communication line terminal and a transfer destination of said internal packet is changeable by changing an external a destination address inputting from said same logic terminal.

7. (currently amended) An integrated information communication system ~~as claimed in claim 4~~, comprising: an external packet reached to an access control apparatus via an external communication line is converted into an internal packet assigned with a simple header based on a conversion table in said access control apparatus, wherein

said external packet includes an external source address and an external destination address,

said internal packet comprises said simple header and said external packet, and

said simple header includes said internal destination address and information section;

said internal packet is sent from a network node via relay apparatus;

said internal destination address is referred at said relay apparatus, is transferred in said integrated information communication system and then reaches to another access control apparatus,

said external packet is restored from said internal packet and is transferred to an external communication line of said integrated information communication system;

only when a set of three addresses of an originating internal address assigned at a logic terminal of a communication line termination inputs said external packet, an external destination address of said entered external packet and said external source

address is registered as the record in the conversion table of said input side access control apparatus, and said external packet is converted into said internal packet;

wherein only when a result of logical product of a destination address of said ~~inputted~~ entered external packet and a destination address mark in record of said conversion table coincides with a destination address in said same record, said external packet is converted into said internal packet and  
said internal packet is an optical frame.

8. (canceled)

9. (currently amended) An integrated information communication system as claimed in Claim 2, wherein ~~upper-grade~~ protocol in said IP packet is referred, and a priority degree of next stage of internal packet reached at said access control apparatus from inside of said internal information communication system is selected by designating a record of said conversion table in accordance with a type of said ~~upper-grade~~ protocol.

10. (currently amended) An integrated information communication system as claimed in Claim 4, wherein ~~upper-grade~~ protocol in said IP packet is referred, and a priority degree of next stage of internal packet reached at said access control apparatus from inside of said internal information communication system is selected by designating a record of said conversion table in accordance with a type of said ~~upper-grade~~ protocol.

11. (currently amended) An integrated information communication system as claimed in Claim 10, wherein when said ~~upper-grade~~ protocol is TCP, said priority degree can be selected at every ~~upper-grade~~ port numbers.

12. (currently amended) An integrated information communication system as claimed in Claim 10, wherein when said ~~upper-grade~~ protocol is UDP, said priority degree can be selected at every ~~upper-grade~~ port numbers.



13. (currently amended) An integrated information communication system as claimed in Claim 2, wherein ~~upper-grade~~ protocol in said IP packet is referred, and a priority degree of next stage of external packet reached at said access control apparatus from outside of said internal information communication system is selected by designating a record of said conversion table in accordance with a type of said ~~upper-grade~~ protocol.

14. (currently amended) An integrated information communication system as claimed in Claim 4, wherein ~~upper-grade~~ protocol in said IP packet is referred, and a priority degree of next stage of external packet reached at said access control apparatus from outside of said internal information communication system is selected by designating a record of said conversion table in accordance with a type of said ~~upper-grade~~ protocol.

15. (currently amended) An integrated information communication system as claimed in Claim 14, wherein when said ~~upper-grade~~ protocol is TCP, said priority degree can be selected at every ~~upper-grade~~ port numbers.

16. (currently amended) An integrated information communication system as claimed in Claim 14, wherein when said ~~upper-grade~~ protocol is UDP, said priority degree can be selected at every ~~upper-grade~~ port numbers.

17. (original) An IP network, wherein

said IP network has access control apparatus,

said access control apparatus includes a conversion table which controls conversions from an external packet to an internal packet and from the internal packet to the external packet,

said conversion table includes plural records, a terminal address at a destination side is registered as an external destination address item in the record, and only when a destination address is non-private address, the internal packet is transferred in said IP network by regarding the external packet as the internal packet.

18. (currently amended) An IP network, wherein

said IP network has access control apparatus,  
said access control apparatus includes a conversion table which controls conversions from an external packet to an internal packet and from the internal packet to the external packet,  
said conversion table includes plural records, and transmitting permission of the internal packet is decided by designating any one of source transmitting permission and destination transmitting permission in the record, and  
wherein charging of said IP network is carried out by designating any one of the source transmitting permission and the destination transmitting permission in the record.

19. (currently amended) An IP network, wherein

said IP network has access control apparatus, said access control apparatus includes a conversion table which controls conversions from an external packet to an internal packet and from the internal packet to the external packet,  
said conversion table includes plural records, and receiving permission of the internal packet is decided by designating source receiving permission in the record, and  
wherein charging of said IP network is carried out by designating the source receiving permission in the record.

20-22. (canceled)